

0500

OIPE

RAW SEQUENCE LISTING DATE: 09/26/2000 PATENT APPLICATION: US/09/663,779 TIME: 12:25:24

Input Set : D:\BT\_CHROMOSOME.rpt
Output Set: N:\CRF3\09262000\1663779.raw



ENTERED

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1 <110> APPLICANT: Corbin, David R.
              Malvar, Thomas M.
              Shukla, Hridayabhiranjan
       <120> TITLE OF INVENTION: BACILLUS THURINGIENSIS CHROMOSOMAL GENOME SEQUENCES AND USES
             THEREOF
     8 <130> FILE REFERENCE: 38-21(51376)B
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C--> 10 <141> CURRENT FILING DATE: 2000-09-15
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     12 <151> PRIOR FILING DATE: 1999-09-17
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    18 <212> TYPE: DNA
     19 <213> ORGANISM: Bacillus thuringiensis
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     27 tottgactot attogtaaat aactacactt ttttgacaaa atacattatc atatoccatc
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     29 aactacctac ctgcatcata cttatttcct tcaacacatt tttaatacat atactacccc
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     31 accagaaacc attttacttt caatcgactt aaaatcatcc acaccaacgc actccatcat
     33 ctctcacata ttatctaaac caaactcccc cattaattca tcttccatcc ataaaacata
     35 cctgcctaac a
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                                                                           120
     49 cttctttga gcccattttt ggtgggggga agccgttttt tttagggtct tccagggggg
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     51 gcccttttgg aaacccctcc gggaccccag cttaatttat ttggaaaaaa agccttcctt
                                                                           240
     53 ttgaacccca áagggggcaa atccttttt ggaatggagc ctgccttttt ttggccctcc
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     55 tcaagattaa aggttttcct ttggattttt caaaaacccc aaggggttta agggcctttt
     57 atcccagggc ctttgaaaat gttggggggg gccccaaggg tattggcccg ggatatttta
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     59 aa
     62 <210> SEQ ID NO: 3
    63 <211> LENGTH: 388
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    65 <213> ORGANISM: Bacillus thuringiensis
     67 <400> SEQUENCE: 3
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    71 caagcagcgg gattagttga ctatcgagtg tatgcttata cgtttgtatg acaacaacat
                                                                           120
    73 cccaggacta gcgagtagga acgtatgcaa ctcaagaccc ataagaacta gggatgtccg
                                                                           180
    75 atgcatgage tttgaaacac tggaaacgga tgcatgtett gtcaagggtg ggettgaacc
     77 cttageagee tgtgttetee atteaettgg aaatatgaae ttgaceagae acaeatgtge
    79 accqcqttaa taacaqqqta tqttaqaacc gaaaattgta gtaagatatg aagtaaagcc
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91 <222> LOCATION: (1)...(387)
     92 <223> OTHER INFORMATION: unsure at all n locations
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     97 tqttqttttt ataqcttaqc caattqqctq aatttttqct qqtttttatt ttaacacaqc
     99 gacatgatee attatttaat egtatgeeaa ettaceaatt aetgettgaa tacgacgagg
     101 tgatggaccg ataccagact cagtgacgag ttccgaaaat accgatagaa gctgaatttt
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     103 adacgegact gecaccacag ageteteage tgetategee aactagtaca eegegeacaa
                                                                             300
     105 caacgtgcgt cttttcaccg aataaagcca tatgagccca tttattacgc ttatgcgcat
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     119 ttttaccgta taagagccac cattttctaa tggaacattt gatagtgaac gatcttgcga
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     121 aatottatgt goatattoag agattttaac totttgatoc catttaagtt ttootttato
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     123 caccgattca tgaactaagt attcgctcat catttttgtc atactagcaa ttgccaatga
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     125 ttcatctgca tttttttcat agtaaatttt tccggaattt gcttgtatta aaattgctga
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     127 tectgettea aegtetatag eaggaactgt etgegetget getttteeaa ttggtaegae
                                                                             360
     129 catgctacaa aatagtgtaa gcactgttac tattgcaata actctcttgc aaaacatacc
                                                                             420
     131 ttacacttct gttacctaca atttctttgc actaaaaaaa gcgttattct aacatagtct
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    137 <211> LENGTH: 453
     138 <212> TYPE: DNA
    139 <213> ORGANISM: Bacillus thuringiensis
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    145 ttgtgtatga ttatcgttat aacgatctat tggtgaaaaa tattttaaac gtctcattag
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    147 tgctgaagtt tttttcttca tactgttcac tcctcgtata gtatgtttaa acttaatttt
                                                                             180
    149 tttactttca tgagagacct gtaaaataac tcttggacgt ctcaagatat ttctagataa
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    151 tggtettagg atcatttggg acaattetta cegeteetgt ggaettaeea cataattaag
                                                                             300
    153 agtgtttctc agtgaacgtg cgggactccc tactcgcagg ctgagcagcc tgaccctcga
    155 acctaagatg gttagtaget ctagggegge tttegattea ggactaaget cteatacaeg
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    157 aggttgttgg tcggcgtgca cactagagat atc
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    161 <211> LENGTH: 496
    162 <212> TYPE: DNA
    163 <213> ORGANISM: Bacillus thuringiensis
    165 <400> SEQUENCE: 7
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167 cagataaagg gattattatt atagaagctg gcgcaaatgg ttcaaacgac ttagataatt 169 ttaaagatcg taatggaaaa aagattttaa atcgaaatag tccagacttc aaggattcag 171 gtgctattat ggttggggcg ggatcatcaa ctgttccaca tcaacgttta tggttttcaa 173 attatggaag tcgattagat gtatatggat qqqqaqaaaa tqttqataca acatcaqcaa 175 atccaagtca aaatactaca aatttatata catcaacatt tagtggaaca tcaagtgctt 300 177 caccaattat tgctggagca gcaacttcga ttcaaggtat tgctaaagaa catcgaggtt 360 179 ctccttatac accagoogaa ttaagaaata tottaagtaa toogaataca ggaacaaaat 420 181 ctcaagatcc gtggaatgat agaataggtg ttttacctga tctaaaatct atattagata 480 183 acttaggttt taattc 496 186 <210> SEQ ID NO: 8 187 <211> LENGTH: 524 188 <212> TYPE: DNA 189 <213> ORGANISM: Bacillus thuringiensis 191 <400> SEQUENCE: 8 193 acaaagcgct tgtaatgcgt tcacataatc ccctaatttt ttagacttat ccattccqaa 195 tatagtttga actaacatat acatteteee etttatatgt actgttaaca ceteaatgat 120 197 aacgettaca ttatttateg teaataaaaa catteaattg ttttaacace aaatetatat 180 199 tgtatcgagc caataatcag cgaggaattc cccgccaatt aaagtttcac tttatcccgc 240 201 attaactgcc cgtaaaagcc cgattggtga gggctgataa tcagtgggag aggaacaacc 300 203 teceaetgat taaagtttea etttateaet tegttaattg atgeetaaat geataaataa 360 205 ccgcctgagt acggtcactt acattcaatt tatttaatat attactcaca tgtgtcttta 420 207 ccgttttcag tgcaataaat aactcgtccg caatctcttg attacttttt ccctctgcaa 480 209 ttaataacaa aatetcaaac tetettteeg ttaaateate atge 524 212 <210> SEQ ID NO: 9 213 <211> LENGTH: 296 214 <212> TYPE: DNA 215 <213> ORGANISM: Bacillus thuringiensis 217 <400> SEQUENCE: 9 219 gcaaagacgt atgaacaatg tatgggtttc ttacgtatac tagaaggagc gaatccatta 60 221 gatcgaacag gtattcatcc agagcaatat aagaatgttg aattgttatt gaagagtcta 120 223 gggttatcga tagattcacc ttcttttatc ccagccgtta agagaaggat agtagctatt 180 225 gttgcaatga ttattgctgc ggtttgccat agcttgtcga cagttgcttt ccaatctatt 240 227 acgaataata aaattattac teetteaett ttaggttteg aateaettta tteage 296 230 <210> SEQ ID NO: 10 231 <211> LENGTH: 615 232 <212> TYPE: DNA 233 <213> ORGANISM: Bacillus thuringiensis 235 <400> SEQUENCE: 10 237 ttccattgga tatattacgt cattagtact atcaaaatgt aatctcttta atgcttcgat 239 gtaaataggc totottaagc cgatacgtgg caatatattc gacgctaaga tttottttgg 241 tgttootatc gcaatgactt tacottoatc aattaatata actttgtota aatccaggtt 120 243 taaaatttct tctattctat gttcgataat aacaatcgtt ttattatatc gttcatgtat 240 245 atctttcata agctttatcg catgtaaggc gcttagtgga tctaaattag ctaacggttc 300 247 atcgaacaat aatatatccg catttgttgt taataaaccc gctagagaaa ctgtttgctt 360 249 ttgacctcct gataattcat atggactttg tttatgaaac gaaggcatct tcacctttgt 420 251 taatgagtoo gaaacaatot ttttcatgto atottgoott acacattcat tttctaaata 253 aaaagctaca tetteeteaa etgteaggee aataaattga geatettgat etageaaaag 540 255 tgttccaacc tgtttactcg cttcaagaat acaacctccc ctcggatctt taccggcaat 257 taaaaagaaa cctgt

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Input Set : D:\BT\_CHROMOSOME.rpt
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269 ccaaatacta gttgacctgc atggccttct acagttgata ctgggaattc agggatttca
                                                                           120
271 ctgtaaggta ctgttactgc gttctcaatt tcgtctgcta atacacctag tcctgatcca
                                                                           180
273 aggattagtc ctacttgtgg tgtctcttga aatttctctt ttaagtatga agctgatttt
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275 gtaataagtt cacgattcat tigtttatcc ccctatttct ttagctcgtt taagaagctt
                                                                           300
277 gatecgtatt etggeatttt cacacegaag ttttetgeta etgttgeace aatateagea
279 aatgittgac gaagtggtaa ticttgtccg ccttctttca tgcttgggct atatgccaat 281 aatggtacat attcacgtgt atggtcagta ccagggtgaa ttggatcatc taccgggtct
                                                                           420
                                                                           480
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285 tcata
288 <210> SEQ ID NO: 12
289 <211> LENGTH: 682
290 <212> TYPE: DNA
291 <213> ORGANISM: Bacillus thuringiensis
293 <400> SEQUENCE: 12
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297 attcaatcgc attttttca attgtttcaa tggaaacgta gttttgtgta gataaccatt
299 caaacaacct atgatgtgat aattettgta tgtatacttt teeetettt atgtageetg
301 gcatattttt tactaagtcc attagctgtt gtgaaatcgt aggaacaact actccaacgc
                                                                           300
303 caaccgcagt taatgttatg ataaaaagat ataacagcaa tatcgctaaa tttctaggta
                                                                           360
305 cttttttatt ctccaaaaag attaatacag gattaaatat gaagtataaa aaaagcgcga
                                                                           420
307 ttaagattgg gaaaaataat gttgatatga agataccaat cggttgaaat aaaaatgata
309 tttttgtgca aataaatatg attcctacaa ccattagcac ttctaatgtc caaaagtgca
                                                                           480
311 cttttgattt caaaaaaatg gcctccttta aactagcact tgttttcatt gtaccaaaat
                                                                           540
313 aaggattgaa tttcacataa tattttcctt tacaatattc caaaatacca ataaatacac
                                                                           600
                                                                           660
315 tacaatgaga ttatatacaa atttgcaggt taaggtgata aaaatgacac aatgcatcat
317 ttgcagaaaa gattcgaaag aa
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321 <211> LENGTH: 501
322 <212> TYPE: DNA
323 <213> ORGANISM: Bacillus thuringiensis
325 <400> SEQUENCE: 13
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329 actgtgaaaa aagttgagga agcttacaga acgatgcgcg acatcgctgc tgaaggcgga
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331 gacatettat tegtaggtae taaaaaacaa geacaagaag etattaaaga agaageaact
333 cgtgctggta tgtacttcgt taaccaacgt tggttaggcg gaactttaac aaacttccaa
                                                                           240
335 acaatccaaa agcgtatcaa gcgtcttaaa gacatcgaaa gaatgcaaga agatggtact
                                                                           300
337 ttcgaagtac ttcctaagaa agaagttgtt caacttaaaa aagagttaga gcgtcttgag
                                                                           360
339 aaattettag geggtattaa agatatgaaa ggtetteeaa gtgeattatt egtagtagae
                                                                           420
341 cctcgtaaag agcgtattgc agttgctgaa gcacgcaaat tacacattcc aatcatcggt
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343 atcgttgata caaactgtga t
346 <210> SEQ ID NO: 14
347 <211> LENGTH: 528
348 <212> TYPE: DNA
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DATE: 09/26/2000
                      PATENT APPLICATION: US/09/663,779
                                                               TIME: 12:25:24
                      Input Set : D:\BT_CHROMOSOME.rpt
                      Output Set: N:\CRF3\09262000\1663779.raw
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     357 aggaagttta gcaacggaag cgattcaaaa gtatattgaa aaaggaagaa gagaattaat
359 ggggaaaaaa gtagtagatg cactctttt aaaccatcat ggtaatcgtt tatcaagaca
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     361 cggattttgg aaaatattaa aacgattagc gaaagaagca aatattgaaa aagagcttac
     363 accteatacg ttgcgtcact cgtttgctac gcacttatta gaaaatggag caattttacg
                                                                               360
     365 tgctgtacaa gaaatgcttg gacatgcaga tatttcaacg actcaaatct atacgcacgt
                                                                               420
     367 ttcaaaaact agattaaaag atgtatataa acagtttcat ccgagagcat agttactatg
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     383 cagaaccttt taccattgtt gcatttttac aggacgacgc tttgtttctt tcaacaaaaa
     385 gaaatattte geetetgeta tttteaaaga acaaatgaca tettgagaeg gttetacaet
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     387 atggtcgacc attetettgt gacgtaacca ctcattette actttttcca aaagtacaat
                                                                               300
     389 taacttatog toatactott tacgoaattt accotttttt tgaaagaaca ttttogttto
                                                                               360
     391 tectettata ettetetgeg acettetaae getttggata atgteaetta atetgeatat
                                                                               420
     393 totaaatoto caccaactgg cagaccatgt gcattacgag toactttaat gcctgtaggt
     395 tttaagaggc gggagatata catcgctg
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     399 <211> LENGTH: 589
     400 <212> TYPE: DNA
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     404 <221> NAME/KEY: unsure
     405 <222> LOCATION: (1)...(589)
     406 <223> OTHER INFORMATION: unsure at all n locations
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     413 gccagtaata gccctaccca attccagatc caatcttgat cccccattaa attaaacaaa
     415 agogoaatga tooctoctac tgcaagaatc gaagagatca taatactatt taaagotgat
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     417 ttcatactat tttcacttcc ttaaaaattt tacaatacag cattgaagtc tactcttaag
                                                                              300
                                                                              360
     419 ttqtccttta cttattaqat tccttttcat taaaaatctt ttatggaaat cccatcatat
     421 aatccggtca tcatacctaa tagcatatac ggagaatggg taggcccagc aaaaattaca
                                                                              420
     423 tgtacatgat cacataccat aatttttaaa ctgaatgaaa ctccaccaaa tcctattcac
                                                                              480
     425 atggtagata tacaaatgag gatgccatta ccaacttgat ttgtatataa atattagacg
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     431 <211> LENGTH: 524
     432 <212> TYPE: DNA
     433 <213> ORGANISM: Bacillus thuringiensis
     435 <400> SEQUENCE: 17
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RAW SEQUENCE LISTING



Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

 VERIFICATION SUMMARY
 DATE: 09/26/2000

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Input Set : D:\BT\_CHROMOSOME.rpt
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L:10 M:270 C: Current Application Number differs, Replaced Current Application No L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date L:93 M:283 W: Missing Blank Line separator, <400> field identifier L:95 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 L:407 M:283 W: Missing Blank Line separator, <400> field identifier L:427 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 L:795 M:283 W: Missing Blank Line separator, <400> field identifier L:815 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 L:1521 M:283 W: Missing Blank Line separator, <400> field identifier L:1539 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 L:1795 M:283 W: Missing Blank Line separator, <400> field identifier L:1815 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:69 L:1929 M:283 W: Missing Blank Line separator, <400> field identifier L:1953 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 L:2331 M:283 W: Missing Blank Line separator, <400> field identifier L:2351 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:88 L:2489 M:283 W: Missing Blank Line separator, <400> field identifier L:2519 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:94 L:2531 M:283 W: Missing Blank Line separator, <400> field identifier L:2561 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:95 L:3145 M:283 W: Missing Blank Line separator, <400> field identifier L:3165 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 L:3615 M:283 W: Missing Blank Line separator, <400> field identifier L:3633 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:136 L:3845 M:283 W: Missing Blank Line separator, <400> field identifier L:3861 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:144 L:3935 M:283 W: Missing Blank Line separator, <400> field identifier L:3957 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:147 L:3997 M:283 W: Missing Blank Line separator, <400> field identifier L:4025 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:149 L:4135 M:283 W: Missing Blank Line separator, <400> field identifier L:4157 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:153 L:4461 M:283 W: Missing Blank Line separator, <400> field identifier L:4465 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:163 L:4559 M:283 W: Missing Blank Line separator, <400> field identifier L:4579 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:166 L:5229 M:283 W: Missing Blank Line separator, <400> field identifier L:5251 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:186 L:5559 M:283 W: Missing Blank Line separator, <400> field identifier L:5581 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:196 L:6465 M:283 W: Missing Blank Line separator, <400> field identifier L:6491 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:225 L:6565 M:283 W: Missing Blank Line separator, <400> field identifier L:6603 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:228 L:6763 M:283 W: Missing Blank Line separator, <400> field identifier L:6779 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:234 L:6945 M:283 W: Missing Blank Line separator, <400> field identifier L:6979 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:239

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Input Set : D:\BT\_CHROMOSOME.rpt
Output Set: N:\CRF3\09262000\1663779.raw

L:7599 M:283 W: Missing Blank Line separator, <400> field identifier L:7625 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:257 L:8669 M:283 W: Missing Blank Line separator, <400> field identifier L:8697 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:288 L:9973 M:283 W: Missing Blank Line separator, <400> field identifier L:10001 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:323 L:10401 M:283 W: Missing Blank Line separator, <400> field identifier L:10437 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:334 L:11511 M:283 W: Missing Blank Line separator, <400> field identifier L:11553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:360 L:11763 M:283 W: Missing Blank Line separator, <400> field identifier L:11793 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:366 L:12001 M:283 W: Missing Blank Line separator, <400> field identifier L:12041 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:372 L:12725 M:283 W: Missing Blank Line separator, <400> field identifier L:12763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:389 L:12923 M:283 W: Missing Blank Line separator, <400> field identifier L:12963 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:393 L:13779 M:283 W: Missing Blank Line separator, <400> field identifier L:13817 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:414 L:14763 M:283 W: Missing Blank Line separator, <400> field identifier L:14791 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:435 L:14849 M:283 W: Missing Blank Line separator, <400> field identifier L:14857 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:437 L:15195 M:283 W: Missing Blank Line separator, <400> field identifier L:15235 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:444 L:15341 M:283 W: Missing Blank Line separator, <400> field identifier L:15383 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:447 L:15389 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:447 L:15849 M:283 W: Missing Blank Line separator, <400> field identifier L:15887 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:458 L:17195 M:283 W: Missing Blank Line separator, <400> field identifier L:17237 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:487 L:17239 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:487 L:17301 M:283 W: Missing Blank Line separator, <400> field identifier L:17335 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:489 L:17337 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:489 L:17619 M:283 W: Missing Blank Line separator, <400> field identifier L:17677 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:495 L:17679 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:495 L:17921 M:283 W: Missing Blank Line separator, <400> field identifier L:17963 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:500 L:18069 M:283 W: Missing Blank Line separator, <400> field identifier L:18113 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:503  $L:18395\ M:283\ W:$  Missing Blank Line separator, <400> field identifier L:18461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:510 L:19185 M:283 W: Missing Blank Line separator, <400> field identifier L:19245 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:525 L:21007 M:283 W: Missing Blank Line separator, <400> field identifier

DATE: 09/26/2000 TIME: 12:25:25 VERIFICATION SUMMARY PATENT APPLICATION: US/09/663,779

Input Set : D:\BT\_CHROMOSOME.rpt
Output Set: N:\CRF3\09262000\I663779.raw

L:21051 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:558
L:23335 M:283 W: Missing Blank Line separator, <400> field identifier
L:25639 M:283 W: Missing Blank Line separator, <400> field identifier
L:26479 M:283 W: Missing Blank Line separator, <400> field identifier
L:26533 M:283 W: Missing Blank Line separator, <400> field identifier